

Claims

[c1] What is claimed is:

1. An elevator for assembling a plurality of a large diameter pipe joints into a pipe string with a drilling rig, a first one of the plurality of large diameter pipe joints adapted to threadingly engage a second one of the plurality of large diameter pipe joints, the elevator detachably securable to an upper end of the first joint, the elevator adapted to both lift and position the first joint while it is stabbed and tightened onto the string, and the elevator further adapted to co-operatively engage a rotary table of the drilling rig to rotatably tighten the second joint to the first joint as the second joint is added to the string.

[c2] 2. The elevator of claim 1 wherein the elevator is clamped to the first joint with a bolt on collar.

[c3] 3. The elevator of claim 2 wherein the collar is bolted around an annular groove formed in an external surface of the first pipe joint.

[c4] 4. The elevator of claim 2 wherein the collar comprises a plurality of Keystone-shaped recesses that extend over

corresponding keystone shaped projections attached to an external surface of the first pipe joint.

- [c5] 5. The elevator of claim 1 wherein the elevator comprises a plurality of lifting pad eyes for attachment to lift lines on the drilling rig.
- [c6] 6. The elevator of claim 5 wherein at least one rotary table lug extends from one of the plurality lifting pad eyes to engage the rotary table.
- [c7] 7. The elevator of claim 2 wherein the collar comprises two halves, each half comprising a plurality of bolt ears adapted to receive bolts for clamping the collar.
- [c8] 8. The elevator of claim 3, wherein the groove in the joint is adapted to frictionally engage a complimentary, annular, centrally extending projection developed along an inner circumferential surface of the collar.
- [c9] 9. The elevator of claim 8, wherein the groove in the joint has a reverse angle shoulder adapted to engage and rest upon a similarly angled projection in the collar.
- [c10] 10. The elevator of claim 8, wherein the as collar supports a weight of the string from the rotary table, a surface of the projection in the collar is slightly spaced axially from a groove surface in the joint whereby the sur-

face of the projection engaging the groove surface supports a substantial amount of the vertical load imparted to the collar by the weight of the string.

- [c11] 11. A drilling rig for assembling a plurality of a large diameter pipe joints into a pipe string, a first one of the plurality of large diameter pipe joints adapted to threadingly engage a second one of the plurality of large diameter pipe joints, the drilling rig comprising an elevator detachably securable to an upper end of the first joint, the elevator adapted to both lift and position the first joint while it is stabbed and tightened onto the string, and the elevator further adapted to co-operatively engage a rotary table of the drilling rig to rotatably tighten the second joint to the first joint as the second joint is added to the string.
- [c12] 12. The drilling rig of claim 11 wherein the elevator is clamped to the first joint with a bolt on collar.
- [c13] 13. The drilling rig of claim 12 wherein the collar is bolted around an annular groove formed in an external surface of the first pipe joint.
- [c14] 14. The drilling rig of claim 12 wherein the collar comprises a plurality of Keystone-shaped recesses that extend over corresponding keystone shaped projections

attached to an external surface of the first pipe joint.

- [c15] 15. The drilling rig of claim 11 wherein the elevator comprises a plurality of lifting pad eyes for attachment to lift lines on the drilling rig.
- [c16] 16. The drilling rig of claim 15 wherein at least one rotary table lug extends from one of the plurality lifting pad eyes to engage the rotary table.
- [c17] 17. The drilling rig of claim 12 wherein the collar comprises two halves, each half comprising a plurality of bolt ears adapted to receive bolts for clamping the collar.
- [c18] 18. The drilling rig of claim 13, wherein the groove in the joint is adapted to frictionally engage a complementary, annular, centrally extending projection developed along an inner circumferential surface of the collar.
- [c19] 19. The drilling rig of claim 18, wherein the groove in the joint has a reverse angle shoulder adapted to engage and rest upon a similarly angled projection in the collar.11.
- [c20] 20. The drilling rig of claim 18, wherein the as collar supports a weight of the string from the rotary table, a surface of the projection in the collar is slightly spaced axially from a groove surface in the joint whereby the

surface of the projection engaging the groove surface supports a substantial amount of the vertical load imparted to the collar by the weight of the string.